

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN R. JACKSON
AND
MINGCHUAN ZHAO

Appeal 2007-1368
Application 10/601,602
Technology Center 1700

Decided: April 30, 2007

Before EDWARD C. KIMLIN, CHUNG K. PAK, and CATHERINE Q. TIMM, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 8-17, 34, and 35.

Claims 8 and 34 are illustrative:

8. An assembly for the continuous, cyclic production of an alkali metal halate comprising an electrolytic cell, a gas and liquid disengager for a catholyte stream, and a gas and liquid disengager for an anolyte stream, said electrolytic cell comprising a low alkali metal ion transport efficiency

permselective polymer membrane separating an anode compartment and a cathode compartment, and a catalytic, metal anode and a catalytic metal cathode or a catalytic, metal anode and a gas-diffusion cathode.

34. An assembly for the continuous, cyclic production of an alkali metal halate, comprising an electrolytic cell, a gas and liquid disengager for a catholyte stream, and a gas and liquid disengager for an anolyte stream, said electrolytic cell comprising a permselective polymer membrane separating an anode compartment and a cathode compartment, a catalytic, metal anode and a catalytic metal cathode or a catalytic, metal anode and a gas-diffusion cathode.

The Examiner relies upon the following references in the rejection of the appealed claims:

De Nora	US 4,381,979	May 3, 1983
Sawamoto	US 5,290,406	Mar. 1, 1994

Appellants' claimed invention is directed to an electrolytic cell for producing an alkali metal halate. The cell comprises, inter alia, "a low alkali metal ion transport efficiency permselective polymer membrane separating an anode compartment and a cathode compartment" (claim 8), and "a permselective polymer membrane separating an anode compartment and a cathode compartment" (claim 34). According to Appellants, prior art cells for producing an alkali metal halate do not include a separating membrane.

Appealed claims 8-17 stand rejected under 35 U.S.C. § 112, first paragraph, enablement requirement. Claim 34 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Sawamoto. In addition, claim 35 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sawamoto in view of De Nora.

We have thoroughly reviewed each of Appellants' arguments for patentability, as well as the declaration evidence relied upon in support thereof. However, we find that the Examiner's rejections are well-founded and in accord with current patent jurisprudence. Accordingly, we will sustain the Examiner's rejections for the reasons set forth in the Answer, and we add the following primarily for emphases.

We consider first the Examiner's rejection of claims 8-17 over § 112, first paragraph. It is the Examiner's position that Appellants' original Specification does not enable one of ordinary skill in the art to make low alkali metal ion transport efficiency permselective polymer membranes within the scope of claims 8-17. The present Specification, at page 13, states that the polymer membranes of the present invention have an alkali metal ion transport efficiency generally less than about 60%, and claims 10 and 11 on appeal recite efficiencies of less than about 50% and 20%, respectively. As pointed out by the Examiner, all the examples in Appellants' Specification describe separation membranes having transport efficiencies greater than 60%, with only Example 10 describing an efficiency close to less than about 60%, i.e., 65%. On the other hand, Appellants acknowledge that separation membranes of the prior art that are used in chlor-alkali cells have a high transport efficiency for alkali metal ions of the order of 92-96%.

Hence, since the transport efficiency of separation membranes within the scope of claims 8-17 is considerably less than the transport efficiency of prior art separation membranes, we agree with the Examiner that it is incumbent upon Appellants to disclose in the original Specification how one

of ordinary skill in the art can make the claimed membranes. However, as set forth by the Examiner, Appellants' original Specification fails to provide any guidance with respect to making separation membranes within the scope of claims 8-17. We do not accept Appellants' argument that the claimed membrane "is known and available to those skilled in the art as shown in the Affidavit under Rule 1.132, submitted after final rejection" (page 28 of principal Br., first para.). While the declarant, one of the present inventors, makes the bald statement that "[s]ince the polymer membrane is commercially available, one skilled in this art could make the assembly of the invention without a disclosure by the applicants of how to make the polymer membrane used in the assembly" (page 2 of Declaration, third para.), the Declaration advances no evidentiary support for the statement. Indeed, as explained by the Examiner, the Declaration provides evidence that prior art membranes must be modified in some way to qualify as membranes within the scope of claims 8-17. As emphasized by the Examiner, the Declaration expressly states that "modification of this [prior art] membrane base to provide the required low alkali metal ion transport efficiency permselective polymer membrane component of the claimed assembly is necessary to provide the desired properties" (sentence bridging pages 2 and 3 of Decl.). The Declaration goes on to state that "Nafion 551 disclosed in the applicants' patent application, Example 10, as useful, is an example of a perfluorosulfonic acid polymer further modified to have the desired low alkali metal ion transport efficiency properties by the addition of Teflon fibers to a base perfluorosulfonic acid polymer so as to produce the useful membrane component of the applicants' claimed assembly" (page 4 of

Decl., first para.). The Declaration further states that commercial membranes, Nafion 112, 1135, 115, and 117, unmodified by the addition of Teflon fibers, would not have the claimed low alkali metal ion transport efficiency.

Consequently, since the present record indicates that commercially available separation membranes must be modified to obtain low alkali metal ion transport efficiencies within the scope of claims 8-17, and the original Specification provides no such disclosure or teaching of such necessary modification, we concur with the Examiner that Appellants' original Specification is non-enabling within the meaning of 112, first paragraph.

We now turn to the § 102 rejection of claim 34 over Sawamoto. Appellants have not rebutted the Examiner's factual determination that Sawamoto describes, within the meaning of § 102, all the structural features of the assembly recited in claim 34. Rather, Appellants contend that Sawamoto "is not considered prior art since this reference does not disclose an assembly including an electrolytic cell for the production of an alkali metal halate, as set forth in the preamble of claim 34" (page 25 of principal Br., first para.). Appellants emphasize that Sawamoto discloses electrolytic cells useful in the production of chlor-alkali and not an alkali metal halate. Appellants maintain that "[i]nspection of the entire record in this case reveals that an alkali metal halate electrolytic cell is, in fact, a structural limitation of the Appellants' claims" (page 14 of the Reply Br., last para.).

We do not subscribe to Appellants' position. We find, like the Examiner, that the claim 34 recitation "for the continuous, cyclic production of an alkali metal halate" is a statement of intended use for the assembly that

does not serve to distinguish the claimed structural components from the components of Sawamoto's electrolytic cell. Appellants have presented no argument, let alone evidence, that the electrolytic cell of Sawamoto, which comprises the components recited in claim 34, is not capable of continuous, cyclic production of an alkali metal halate. Consequently, Appellants have not persuaded us of error in the Examiner's rejection.

Appellants have not presented a different, substantive argument against the Examiner's § 103 rejection of claim 35. To wit, Appellants have not refuted the Examiner's legal conclusion that "it would have been obvious to one of ordinary skill in the art to have substituted the anode of deNora et al for the anode of Sawamoto et al to adapt the cell of Sawamoto et al for making chlorine gas as taught by deNora et al because the electrocatalytic anode of deNora et al had low chlorine over voltage" (page 5 of Answer, fifth para.).

We also note that Appellants have not presented separate, substantive arguments for dependent claims 9-17 and 35.

As a final point, in view of the denial of Appellants' petition under 37 C.F.R. § 1.181(a)(3), filed December 12, 2006, requesting the Examiner to reopen prosecution, we find it unnecessary to grant Appellants' further request to remand this application to the Examiner.

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner's decision rejecting the appealed claims is affirmed.

Appeal 2007-1368
Application 10/601,602

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(iv)(effective Sept. 13, 2004).

AFFIRMED

cam

Andrew E. Pierce
161 McCracken Drive
Seneca, SC 29678